

Application No. 10/522,748
Amendment dated December 22, 2009

Docket No.: 1152-0316PUS1

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) An intermittent communication method for data communication apparatus, comprising:

a reception step for receiving data transmitted intermittently from a communication partner side and storing the data into a buffer memory;

a playback step for playing the stored data in the buffer memory in parallel with the reception step; a first setup step for setting up a first intermittent transmission schedule which will not cause either overflow or underflow of data in the buffer memory, based on a data characteristic of the data;

a proposal step for transmitting the first intermittent transmission schedule to a communication partner side to make a proposal of the first intermittent transmission schedule in order to receive an approval or disapproval of the proposed first intermittent transmission schedule; and

an electric power supply stop step for stopping electric power supply to an inter-node communicator during a non-transmission time based on a current intermittent transmission schedule of the data being transmitted intermittently.

2. (Original) The intermittent communication method for data communication apparatus according to Claim 1, wherein the data characteristic includes an elapsed time after a start of data playback and a necessary total amount of data up to the elapsed time.

3. (Original) The intermittent communication method for data communication apparatus according to Claim 1, wherein the data characteristic is information that can lead a necessary total amount of data up to an elapsed time after a start of data playback.

4. (Original) The intermittent communication method for data communication apparatus according to Claim 2 or 3, wherein the data characteristic includes a total amount of data that will have been used by the elapsed time.

5. (Original) The intermittent communication method for data communication apparatus according to Claim 2 or 3, wherein the data characteristic is information that can lead a total amount of data that will have been used by the elapsed time.

6. (Previously Presented) The intermittent communication method for data communication apparatus according to Claim 1, wherein the first intermittent transmission schedule includes a data transmission rate.

7. (Previously Presented) The intermittent communication method for data communication apparatus according to Claim 6, wherein the first intermittent transmission schedule includes an amount of buffering of data to be stored in advance in the buffer memory from a start of data transmission from a transmitter to a beginning of playback on a receiver.

8. (Original) The intermittent communication method for data communication apparatus according to Claim 7, wherein the amount of buffering is set at the maximum.

9. (Original) The intermittent communication method for data communication apparatus according to Claim 6, wherein the data transmission rate is set at the maximum.

10. (Original) The intermittent communication method for data communication apparatus according to Claim 6, wherein the data transmission rate is set at the minimum.

11. (Previously Presented) The intermittent communication method for data communication apparatus according to Claim 1, wherein the first intermittent transmission schedule includes intermittent communication information that represents the amount of data transmission in one intermittent period.

12. (Original) The intermittent communication method for data communication apparatus according to Claim 11, wherein the intermittent communication information includes the time of transmission in each intermittent communication period.

13. (Original) The intermittent communication method for data communication apparatus according to Claim 11, wherein the intermittent communication information includes the amount of data transmission in each intermittent communication period.

14. (Original) The intermittent communication method for data communication apparatus according to Claim 11, wherein the intermittent communication information includes a data transmission rate in each intermittent communication period.

15. (Previously Presented) The intermittent communication method for data communication apparatus according to Claim 1, wherein the first intermittent transmission schedule includes a start time of a new intermittent communication.

16. (Previously Presented) The intermittent communication method for data communication apparatus according to Claim 1, further comprising:

a comparison step for comparing the first intermittent transmission schedule with [[a]] the current intermittent transmission schedule,

wherein the proposal step is performed when the first intermittent transmission schedule is different from the current intermittent transmission schedule.

17. (Previously Presented) The intermittent communication method for data communication apparatus according to Claim 16, wherein the communication partner side includes:

a second setup step for setting up a second intermittent transmission schedule which will not cause either overflow or underflow of data in the buffer memory, based on the data characteristic; and

a modification step for modifying the current intermittent transmission schedule into the second intermittent transmission schedule if the second intermittent transmission schedule is different from the current intermittent transmission schedule.

18. (Previously Presented) The intermittent communication method for data communication apparatus according to Claim 16, wherein a receiver of the data implements the reception step, the playback step, the first setup step, the comparison step, the proposal step and the electric power supply stop step.

19. (Previously Presented) The intermittent communication method for data communication apparatus according to Claim 16, wherein a transmitter of the data implements the first setup step while a receiver of the data implements the reception step, the playback step, the comparison step, the proposal step and the electric power supply stop step.

20. (Previously Presented) The intermittent communication method for data communication apparatus according to Claim 16, wherein a transmitter of the data implements the first setup step, the comparison step and the proposal step while a receiver of the data implements data reception step, the playback step and the electric power supply stop step.

21. (Original) The intermittent communication method for data communication apparatus according to Claim 17, wherein the data is transmitted from a single transmitter to first and

second receivers, and the modification step is implemented between the transmitter and the first receiver and between the transmitter and the second receiver.

22. (Original) The intermittent communication method for data communication apparatus according to Claim 16, wherein the first setup step, the comparison step and the proposal step are executed in a data link layer in terms of an OSI layer model.

23. (Currently Amended) A data communication apparatus for receiving data transmitted intermittently from a transmitting side, storing the data into a buffer memory and playing the data stored in the buffer memory in parallel with the data storing,

comprising:

a multimedia data communication controller for setting up a intermittent transmission schedule which will not cause either overflow or underflow during a real-time playback of the data, based on a data characteristic of the data;

a communicator for transmitting the intermittent transmission schedule to the transmitting side to make a proposal of the intermittent transmission schedule in order to receive an approval or disapproval of the proposed intermittent transmission schedule and to receive data transmitted intermittently based on the intermittent transmission schedule; and

an electric power supply controller for stopping electric power supply to the communicator during a non-transmission time based on the intermittent transmission schedule.

24. (Previously Presented) The data communication apparatus according to Claim 23, wherein the intermittent transmission schedule includes a time interval for alternation of intermittent communication or the amount of data transmission for alternation of intermittent communication.

25. (Previously Presented) A data communication apparatus for playing received data, comprising:

an inter-node communicator for transmission of a transmission schedule to and for reception of data from a communication partner appliance;

a buffer memory for storing the data received by the inter-node communicator;

a data player for playing the storage data stored in the buffer memory in parallel while the buffer memory is implementing a buffering process of storing the data;

a data quality manager for storing quality management information of the received data to be played;

a schedule judging portion for transmitting via the inter-node communicator a transmission schedule of the data to the communication partner appliance, according to which the buffer memory will not cause either overflow or underflow; and

an electric power supply controller for stopping electric power supply to the communicator during a non-transmission time based on the transmission schedule, wherein the transmission schedule is set up based on the quality management information.

26. (Previously Presented) A data communication apparatus, comprising:

an inter-node communicator for transmitting a transmission schedule to a communication partner appliance and receiving data from the communication partner appliance;

a data quality manager for storing quality management information of the data;

a schedule judging portion for transmitting via the inter-node communicator the transmission schedule of the data to the communication partner appliance, according to which a buffer memory of the communication partner appliance will not cause either overflow or underflow; and

an electric power supply controller for stopping electric power supply to the communicator during a non-transmission time based on the transmission schedule, wherein the transmission of the data is performed based on the transmission schedule and the transmission schedule is set up based on the quality management information.

27. (Original) The data communication apparatus according to Claim 25 or 26, further comprising:

a data quality reference portion for transmitting the quality management information from the data quality manager to the schedule judging portion,
wherein the transmission schedule is set up by the schedule judging portion.

28. (Original) The data communication apparatus according to Claim 25 or 26, further comprising:

a data quality reference portion for acquiring the quality management information from the data quality manager and setting up the transmission schedule.

29. (Canceled).

30. (Original) The data communication apparatus according to Claim 25 or 26, wherein the quality management information includes an elapsed time after a start of playback of the data and a necessary total amount of data up to the elapsed time.

31. (Original) The data communication apparatus according to Claim 25 or 26, wherein the quality management information is information that can lead the necessary total amount of data up to an elapsed time after a start of playback of the data.

32. (Previously Presented) The data communication apparatus according to Claim 30, wherein the quality management information includes a total amount of data that will have been used by the elapsed time.

33. (Previously Presented) The data communication apparatus according to Claim 30, wherein the quality management information is information that can lead a total amount of data that will have been used by the elapsed time.

34. (Original) The data communication apparatus according to Claim 25 or 26, wherein the transmission schedule includes a data transmission rate.

35. (Original) The data communication apparatus according to Claim 34, wherein the transmission schedule includes an amount of buffering of data to be stored in advance in the

buffer memory from a start of data transmission from a transmitter to a beginning of playback on a receiver.

36. (Original) The data communication apparatus according to Claim 35, wherein the amount of buffering is set at the maximum.

37. (Original) The data communication apparatus according to Claim 34, wherein the data transmission rate is set at the maximum.

38. (Original) The data communication apparatus according to Claim 34, wherein the data transmission rate is set at the minimum.

39. (Original) The data communication apparatus according to Claim 25 or 26, wherein the transmission schedule includes intermittent communication information that represents an amount of data transmission in one intermittent period.

40. (Original) The data communication apparatus according to Claim 39, wherein the intermittent communication information includes a time of transmission in each intermittent communication period.

41. (Original) The data communication apparatus according to Claim 39, wherein the intermittent communication information includes an amount of data transmission in each intermittent communication period.

42. (Original) The data communication apparatus according to Claim 39, wherein the intermittent communication information includes a data transmission rate in each intermittent communication period.

43. (Original) The data communication apparatus according to Claim 25 or 26, wherein the transmission schedule includes a start time of a new intermittent communication.

44. (Previously Presented) A program recorded on a recording medium for making a data communication apparatus execute the intermittent communication method according to claim 1.

45. (Canceled).

46. (Previously Presented) The intermittent communication method for data communication apparatus according to Claim 1, further comprising:

a second setup step for setting up a second intermittent transmission schedule in the communication partner side, based on the first intermittent transmission schedule; and

a modification step for modifying the current intermittent transmission schedule into the second intermittent transmission schedule if the second intermittent transmission schedule is different from the current intermittent transmission schedule.

47. (Previously Presented) The intermittent communication method for data communication apparatus according to Claim 1, wherein the first intermittent transmission schedule includes information that represents an intermittent communication period.

48. (Previously Presented) The data communication apparatus according to Claim 23, wherein the transmission schedule includes the amount to be changed of data transmission in each intermittent communication period.

49. (Previously Presented) The data communication apparatus according to Claim 25 or 26, wherein the intermittent transmission schedule includes information that represents an intermittent communication period.